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Conference Abstract

A New Model for Efficient, Need-Driven Progress in Generating Primary Biodiversity Information Resources

Alex Asase[‡], Moses N Sainge[§], Raoufou A. Radji[|], Omokafe A Ugbogu[¶], Andrew Townsend Peterson[#]

‡ University of Ghana, Legon-Accra, Ghana
§ Tropical Plant Exploration Group (TroPEG) , Mundemba, Cameroon
| Université de Lomé, Lomé, Togo
¶ Forestry Research Institute of Nigeria, Ibada, Nigeria
# University of Kansas, Lawrence, Kansas, United States of America

Corresponding author: Alex Asase (alexasase@gmail.com)

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Abstract

The field of biodiversity informatics has developed rapidly in recent years with broad availability of large-scale information resources. However, online biodiversity information are biased (Boakes et al. 2010, Stropp et al. 2016) as a result of the relatively slow capture and digitization of existing data resources. The West African Plants (WAP) initiative approach to data capture is a prototype of a novel solution to the challenge of the traditional model, in which the institutional “owner” of the specimens is responsible for digital capture of associated data. The WAP Initiative is a consortium of West African researchers in botany, in coordination with six institutions across Europe and North America; its goal is to digitize and mobilize available, high-quality, primary biodiversity occurrence data resources for West African plant diversity (http://jrsbiodiversity.org/grants/university-of-ghana-herbaria/). Here, we developed customized workflows for data capture in formats directly and permanently useful to the “owner” herbarium, and digitized significant new biodiversity records adding to the information available for the plants of the region. Data records were captured strictly in accordance with DarwinCore standards,

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achieved either by (a) capturing data records from existing images (e.g., images supplied by Naturalis Bodiversity Centre), or (b) capturing data from images taken quickly and efficiently by project personnel in West African Herbaria. Digitization of images and data began in 2015 in West African partner institutions, and by middle of 2018 resulted in 190,953 records of species in 1965 genera and 331 families from 16 West African countries (Fig. 1). Our approach is cost-effective, allows development of information resources even for regions in which political situations make it impossible, and it provides a historical context against which to compare newer data as the latter become available (Peterson et al. 2016). Further measures of success of the initiative will center on whether the institutions “owning” the specimens follow through and put the new data records online. Already, several project institutions have put initial project data online as part of their GBIF data contributions, but—of course—success would consist of *all* project-generated data being completely available online. Note that this model is the reverse of the traditional model, in which the institutions holding the specimens create the information resources that are used by the rest of the world. This new paradigm in specimen digitization has considerable promise to accelerate and improve the process of generating biodiversity information, and can be replicated and applied in many biodiversity-rich, information-poor regions to remedy the oft-cited massive gaps in information availability.

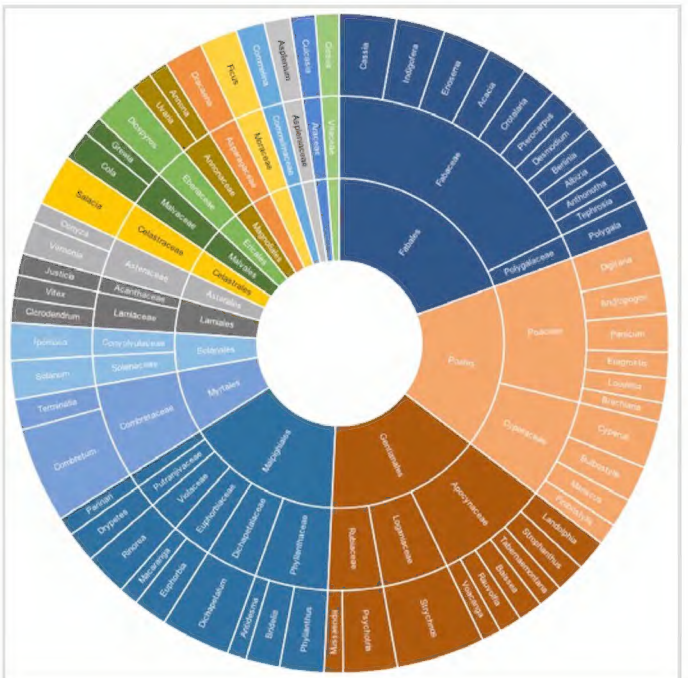

Figure 1.

Summary of hierarchical taxonomic representation (order, family, genus) of plant genera among data generated as part of the West African Plants initiative for those genera with ≥ 500 records. Taxonomic authority is IRMNG (Rees et al. 2017).

Keywords

primary biodiversity data, plants, biodiversity informatics, digitization, West Africa

Presenting author

Alex Asase

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